

## **CLAIMS**

1. A power supply accepting a mains voltage as an input and outputting a first predetermined voltage from a first terminal and a second predetermined voltage from a second terminal, comprising:

a main circuit for deriving the first predetermined voltage from the mains voltage;

a secondary circuit for deriving the second predetermined voltage from the main circuit; and

a preload circuit applying a preload on the main circuit as a result of the secondary circuit going out of control.

2. The power supply of claim 1, the main circuit including a transformer.

3. The power supply of claim 1, the preload circuit including an output directly to the second terminal.

4. The power supply of claim 1, the secondary circuit including a magamp controller.

5. The power supply of claim 4, the preload circuit including an output directly to the second terminal and an input from the magamp controller.

6. The power supply of claim 1, the secondary circuit including a post regulator circuit including a magamp controller.

7. The power supply of claim 1, the preload circuit including a voltage-controlled current source operatively interposed between the main circuit and the secondary circuit.

8. The power supply of claim 7, the voltage-controlled current source including a transistor having a base, the base of the transistor being associated with the magamp controller of the post regulated circuit.

9. The power supply of claim 8, further comprising a zener diode operatively disposed between the base of the transistor and the magamp controller of the post regulated circuit.

10. The power supply of claim 1, wherein the secondary circuit goes out of control as a result of a load on the first terminal being relatively low and a load on the second terminal being relatively high.

11. The power supply of claim 1, the main circuit including a transformer, and the secondary circuit deriving a second predetermined voltage from the transformer in the main circuit.

12. A method of operating a power supply, the power supply comprising a main circuit for deriving a first predetermined voltage from a mains voltage, and a secondary circuit for deriving a second predetermined voltage from the main circuit, comprising:

applying a preload on the main circuit as a result of the secondary circuit going out of control.

13. The method of claim 12, further comprising  
providing a voltage-controlled current source operatively interposed between the main circuit and the secondary circuit.

14. The method of claim 12, wherein the secondary circuit goes out of control as a result of a load on the first terminal being relatively low and a load on the secondary terminal being relatively high.

15. The method of claim 12, wherein the main circuit includes a transformer, and the secondary circuit derives a second predetermined voltage from the transformer in the main circuit.

16. A printing apparatus comprising:

- a first element, selected from a group comprising a charge generator, an imaging light source, a motor, a printhead, and a heat source;

- a second element, selected from a group comprising a charge generator, an imaging light source, a motor, a printhead, and a heat source;

- a power supply accepting a mains voltage as an input and outputting a first predetermined voltage from a first terminal and a second predetermined voltage from a second terminal;

- the first element being associated with the first terminal and the second element being associated with the second terminal;

- the power supply including

  - a main circuit for deriving the first predetermined voltage from the mains voltage,

  - a secondary circuit for deriving the second predetermined voltage from the main circuit, and

  - a preload circuit for applying a preload on the main circuit as a result of the secondary circuit going out of control.

17. The printing apparatus of claim 16, the secondary circuit in the power supply being a post regulator circuit.

18. The printing apparatus of claim 16, the preload circuit in the power supply including a voltage-controlled current source operatively interposed between the main circuit and the secondary circuit.

19. The printing apparatus of claim 16, wherein the secondary circuit goes out of control as a result of a load on the first terminal being relatively low and a load on the second terminal being relatively high.

20. The printing apparatus of claim 16, the main circuit in the power supply including a transformer, and the secondary circuit deriving a second predetermined voltage from the transformer in the main circuit.